

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

17.9.14

To:  
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## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY  
(PCT Rule 43bis.1)

Date of mailing (day/month/year)	13.09.2005
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Applicant's or agent's file reference  
R05089PCT

**FOR FURTHER ACTION**

See paragraph 2 below

International application No. PCT/JP2005/013528	International filing date (day/month/year) 15.07.2005	Priority date (day/month/year) 20.07.2004
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International Patent Classification (IPC) or both national classification and IPC  
Int.Cl.<sup>7</sup> H02M3/155, H01M10/44

Applicant  
RICOH COMPANY, LTD.

**1. This opinion contains indications relating to the following items:**

- ☒ Box No. I      Basis of the opinion
- ☐ Box No. II      Priority
- ☐ Box No. III      Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV      Lack of unity of invention
- ☒ Box No. V      Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI      Certain documents cited
- ☐ Box No. VII      Certain defects in the international application
- ☐ Box No. VIII      Certain observations on the international application

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

Date of completion of this opinion		30.08.2005	
<b>Japan Patent Office</b> 3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan		Authorized officer	3V 3 6 3 0
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**WRITTEN OPINION OF THE  
 INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2005/013528

**Box No. I      Basis of the opinion**

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
- ☐ table(s) related to the sequence listing

b. format of material

- ☐ in written format
- ☐ in computer readable form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/013528

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-27	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-27	NO
Industrial applicability (IA)	Claims	1-27	YES
	Claims		NO

2. Citations and explanations

document1: JP 2002-325438 A(FUJITSU LIMITED)08.11.2002  
document2: JP 2004-173460 A(FUJITSU LIMITED)17.06.2004  
document3: JP 2004-21782 A(RICOH COMPANY, LTD.)22.01.2004  
document4: JP 10-111371 A(SEIKO EPSON CORPORATION)28.04.1998  
document5: JP 2003-216247 A(RICOH COMPANY, LTD.)31.07.2003  
document6: JP 6-70544 A(FUJITSU LIMITED)11.03.1994  
document7: JP 7-277107 A(HANSHIN ELECTRIC CO., LTD.)24.10.1995

The subject matters of claims1-2 and claims4-6 do not appear to involve an inventive step in view of the document1 cited in the ISR, the document2 cited in the same and the document3 in the same.

Although D1 does not disclose the technical features [a step-down switching regulator] and [a selection circuit and a selection control circuit], among the present invention, that of D2 and that of D3 share the same problem, that is, [reverse direction flow], and employ the same technical feature. Therefore, employing the feature [a step-down switching regulator(see [paragraph 【0006】 ])] disclosed in D2 and [over current protection circuit(see[paragraph 【0023】 ])] disclosed in D3 in order to constitute the present invention would have been easily conceived by the person skilled in the art.

The subject matters of claim3 and claims7-8 do not appear to involve an inventive step in view of D1, D2, D3 and the document4 cited in the ISR. Employing the feature [integration of a power supply (see[paragraph 【0067】 ])] disclosed in D4 in order to constitute the present invention would have been easily conceived by the person skilled in the art.

**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

Continuation of: V

The subject matters of claims9-11 and claim13 do not appear to involve an inventive step in view of D1, D2, D3 and the document5 cited in the ISR. Employing the feature [a power supply with a switching regulator and a series regulator (see [paragraph 【0017】 ])] disclosed in D5 in order to constitute the present invention would have been easily conceived by the person skilled in the art.

The subject matters of claim12 and claims14-15 do not appear to involve an inventive step in view of D1, D2, D3, D4 and D5.

The subject matters of claims16-17 and claim19 do not appear to involve an inventive step in view of D1, D2, D3 and the document6 cited in the ISR. Employing the feature [parallel running of the DC-DC converter power supply (see [paragraph 【0009】 ])] disclosed in D6 in order to constitute the present invention would be easily conceived by the person skilled in the art.

The subject matters of claim18 and claims20-21 do not appear to involve an inventive step in view of D1, D2, D3, D4 and D6.

The subject matters of claims22-23 and claim25 do not appear to involve an inventive step in view of D1, D2, D3 and the document7 cited in the ISR. Employing the feature [a secondary cell charging DC-DC converter (see [paragraph 【0009】 ])] disclosed in D7 in order to constitute the present invention would have been easily conceived by the person skilled in the art.

The subject matters of claim24 and claims26-27 do not appear to involve an inventive step in view of D1, D2, D3, D4 and D7.